

SOOT DETECTOR FOR ENGINE OIL

Abstract of the Disclosure

[0035] A method and apparatus for detecting the concentration of soot particles in engine oil. A microwave signal having a varying frequency is applied to a transmission line having a probe tip exposed to the engine oil. A voltage is read at a stationary detection point along the length of the transmission line for each applied frequency. The applied frequency when the probe voltage is equal to a null voltage of a standing wave within the transmission line is compared to a reference frequency determined when the probe voltage is equal to a null voltage for a known concentration of soot particles. The concentration is calculated based upon the result of the comparison. Preferably, a reference probe receives the same input signal. A known relationship between the reference probe and the transmission line is then used to eliminate temperature effects on the applied frequency.